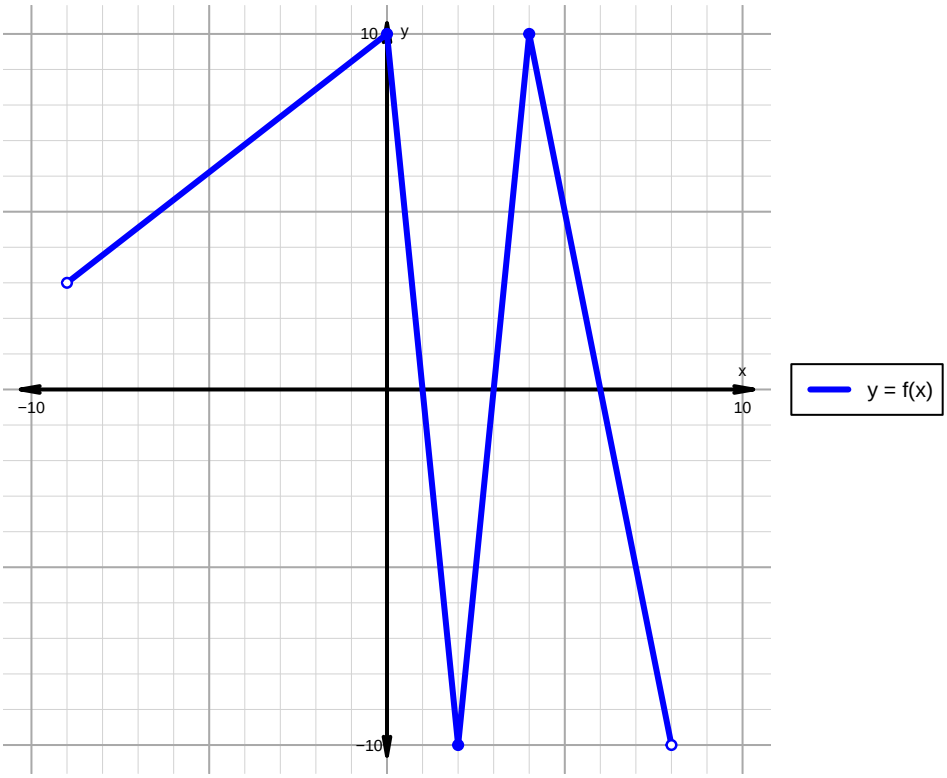
Name: Date:

Intervals, Transformations, and Slope Solution (version 22)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9, 1) \cup (3, 6)$
Negative	$(1, 3) \cup (6, 8)$
Increasing	$(-9, 0) \cup (2, 4)$
Decreasing	$(0, 2) \cup (4, 8)$
Domain	$(-9, 8)$
Range	$(-10, 10)$

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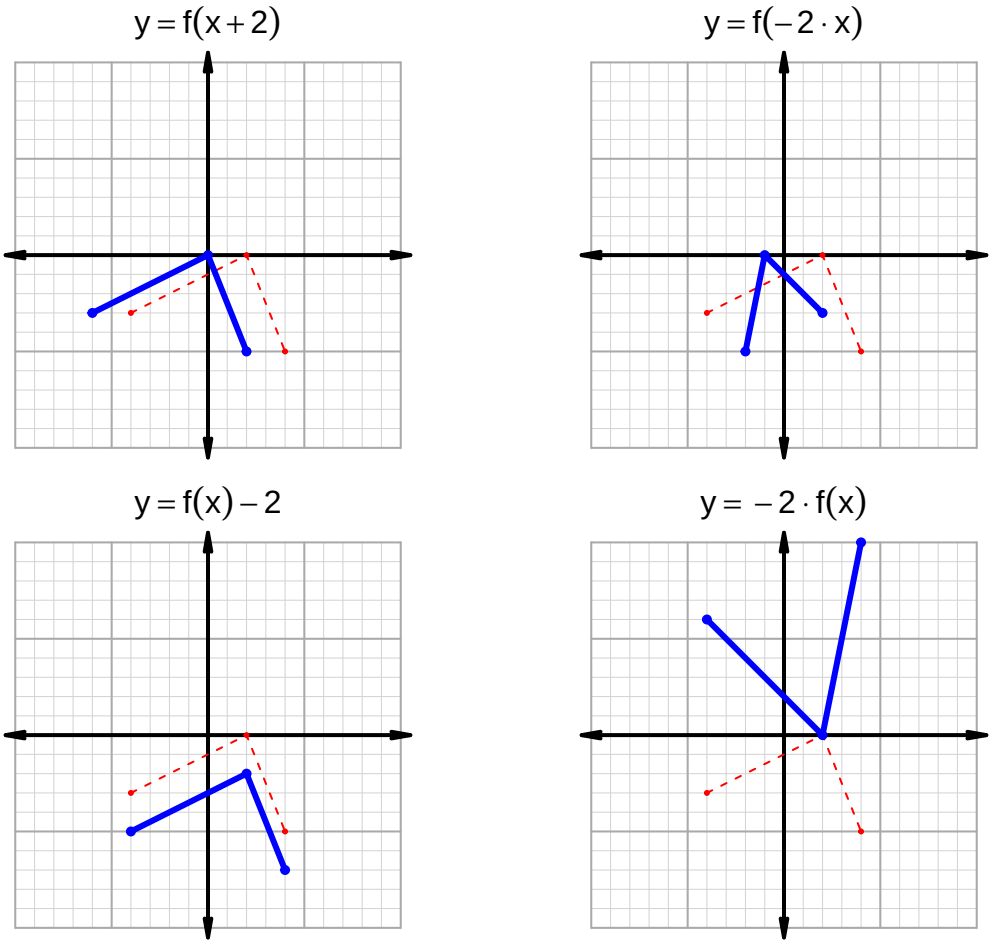
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 69$ and $x_2 = 89$. Express your answer as a reduced fraction.

x	$g(x)$
52	89
69	52
77	69
89	77

$\frac{g(89)-g(69)}{89-69} = \frac{77-52}{89-69} = \frac{25}{20}$

The greatest common factor of 25 and 20 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{4}$$